

## CLAIMS:

1. An apparatus for the formation of a head on a beverage contained in a vessel, including an ultrasonic oscillator for generating an electric signal having an ultrasonic frequency, a transducer connected to the oscillator for converting the electrical signal into a physical ultrasonic excitation, a contact surface coupled to the transducer, onto which the vessel containing the beverage is placed in use, wherein means is provided for maintaining an hydrated layer on the contact surface substantially throughout a period of use.
2. The apparatus of claim 1 wherein means for maintaining the hydrated layer includes a hydrophilic material.
3. The apparatus of claim 2 wherein the hydrophilic material is Hydrogel.
4. The apparatus of claim 3 wherein the Hydrogel is substantially 1 to 2mm thick and includes a surface area substantially corresponding to a base of the vessel containing the beverage placed thereon, in use.
5. The apparatus of any one of claims 2 to 4 wherein the hydrated layer includes an antifungal or antibacterial agent.
6. The apparatus according to any one of the preceding claims wherein a refrigeration circuit is arranged to pass by adjacent the contact surface.
7. The apparatus of claim 6 wherein the contact surface has a chamber therebelow including an input and output end for

coupling with the refrigeration circuit to allow refrigerant to pass therethrough.

8. The apparatus of any one of claims 1 to 5 wherein the  
5 contact surface comprises a platform.

9. The apparatus of claims 8 wherein the platform includes a recessed portion at least corresponding in area to a base of the vessel intended for use.

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10. The apparatus of claim 8 or 9 wherein means is provided to control a supply of water to the recess portion of the platform.

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11. The apparatus of claim 8, 9 or 10 wherein an aperture is provided in the platform.

12. The apparatus of claim 11 wherein a measured amount of water is supplied to the platform through the aperture.

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13. The apparatus of claim 12 wherein the measured amount is 1 to 5 millilitres.

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14. The apparatus according to any one of claims 8 to 13 wherein a reservoir is provided to supply water to the platform.

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15. The apparatus according to any one of claims 8 to 13 wherein a mains water supply is coupled to the apparatus for delivery to the platform.

16. The apparatus of claim 14 wherein a wick means is provided between the reservoir and the platform.

17. The apparatus of any one of the preceding claims wherein the apparatus is activated by simultaneously closing two switches, one of these switches associated with the means for maintaining the hydrated layer.

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18. A method of forming a head of froth on a beverage contained in a vessel comprising the steps of generating an electrical signal having a variable ultrasonic frequency, converting the electrical signal into a physical ultrasonic excitation, subjecting the vessel containing the beverage to the ultrasonic excitation for a predetermined time and, during the predetermined time, varying the frequency of the electrical signal such that the vessel and beverage are subjected to a predetermined range of ultrasonic frequencies.

19. The method according to claim 18 wherein the range is 20 to 80 kHz.

20 20. The method according to claim 18 or 19 wherein the electrical signal is monitored to identify a peak in power (occurring at resonant frequency) and the frequency is maintained at this identified level for the remainder of the predetermined time.

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21. Apparatus for forming a head of froth on a beverage contained in a vessel comprising an ultrasonic oscillator for generating an electrical signal having a variable ultrasonic frequency, a transducer connected to the oscillator for converting the electrical signal into a physical ultrasonic excitation, a surface coupled to the transducer, on to which the vessel is placed in use to be subjected to the ultrasonic excitation for a predetermined time, and a control means such that, during the

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predetermined application time, the frequency of the electrical signal is varied such that the vessel and beverage are subjected to a range of ultrasonic frequencies.

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22. The apparatus of claim 21 wherein the control means further monitors for maximum resonance of the beverage and vessel by measuring the power being drawn by the transducer.

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23. The apparatus of claim 22 wherein the control means substantially maintains the maximum resonant frequency for the remainder of the application time.

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24. The apparatus of any one of claims 21 to 23 wherein the control means pulses the electrical signal for a plurality of predetermined times.

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25. The apparatus of claim 20 where the predetermined time is up to 5 seconds.

26. An apparatus of any one of the proceeding claims substantially in the form of a bar top beer pump.

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